

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A method for charging for uncounted network traffic overhead, the traffic carried through a network by data packets in a plurality of data paths, the method comprising:

providing a rate regulator having a regulator bandwidth and coupled to ~~an~~ respective ingress port, said rate regulator operative to regulate the rate of a data path established over a said network between said ~~respective~~ ingress port and ~~[[an]]~~ a corresponding egress port, said egress port having an egress port bandwidth;

determining a respective overhead criterion for said data path; and,

configuring said rate regulator with said respective overhead criterion to charge for uncounted overhead, whereby each data packet transmitted through said rate regulator is ~~handled~~ transmitted to said egress port as a packet containing said uncounted overhead ~~that has additional bytes~~ as determined by said overhead criterion, thereby ensuring that said regulator bandwidth does not exceed said egress port bandwidth,

wherein the data path includes a plurality of network data protocols;

wherein said uncounted overhead comprises overhead from ~~a~~ the plurality of network data protocols, and

wherein said each data packet enters said network through said ingress port and exits ~~the~~ said network through said egress port.

2. (currently amended): The method of claim 1, wherein said step of providing a rate regulator coupled to an ~~an~~ respective-ingress port includes providing a rate regulator coupled to an ingress port having a rate selected from the group consisting of 10 Mbps, 100 Mbps and 1 Gbps.

3. (Original): The method of claim 2, wherein said ingress port is an Ethernet port.

4. (currently amended): The method of claim 1, wherein said step of determining a respective overhead criterion for said data path includes determining an overhead criterion that defines the maximum difference size between an output overhead at ~~the~~ said egress port and an input overhead at ~~the~~ said ingress port of said each said data packet.

5. (currently amended): The method of claim 4, wherein said determining an overhead criterion includes calculating said overhead criterion using the formula $\{IN_s - OUT_s\} \cdot \Phi$, wherein IN_s is the size of an input packet input at said ~~respective~~-ingress port, OUT_s is the size of an output packet output at said ~~respective~~-egress port, and Φ is a rate factor.

6. (currently amended): The method of claim 5, wherein said rate factor Φ is equal to 1 if a rate of a ~~said~~ ingress port at a source node is higher than a rate of said egress port, and wherein said rate factor Φ is equal to 0 if a rate of said ingress port is lower than said rate of said egress port.

7. (Original): The method of claim 1, wherein step of providing a rate regulator operative to regulate the rate of a data path established over a network includes providing an Ethernet based network having Ethernet traffic.

8. (currently amended): The method of claim 7, wherein said Ethernet based network is selected from ~~the~~a group consisting of a metro Ethernet network (MEN), a local area network (LAN), and a virtual local area network (VLAN).

9. (Original): The method of claim 7, wherein said Ethernet traffic is transmitted over a non-Ethernet network.

10. (currently amended): The method of claim 9, wherein said non-Ethernet network is selected from ~~the~~a group consisting of a SDH network and a SONET network.

11. (currently amended): The method of claim 1, wherein said egress port is an Ethernet port selected from ~~the~~a group consisting of 10 Mbps, 100 Mbps and 1 Gbps.

12. (currently amended): A network rate regulator having a regulator bandwidth and used for regulating data packet traffic carried on a data path established between an ingress port and an egress port, said egress port having an egress port bandwidth, the regulator comprising:

a criterion determining mechanism for determining an overhead criterion for said data path; and

a configuring mechanism for configuring the rate regulator with said overhead criterion to charge for uncounted overhead, whereby each data packet is transmitted to said egress port ~~handled as a packet that contains said uncounted overhead~~ ~~has additional bytes as determined by~~ said overhead criterion, thereby ensuring that said regulator bandwidth does not exceed said egress port bandwidth ,

wherein the data path includes a plurality of network data protocols;

wherein said uncounted overhead comprises overhead from ~~a~~ the plurality of network data protocols, and

wherein said each data packet enters said network through said ingress port and exits ~~the~~ said network through said egress port.

13. (currently amended): The rate regulator of claim 12, wherein each said data packet has an input overhead and an output overhead, and wherein said overhead criterion is defined as a maximum difference between said output overhead at ~~the~~ said egress port and said input overhead at ~~the~~ said ingress port.

14. (currently amended): The rate regulator of claim 13, wherein said overhead is calculated using the formula $\{IN_s - OUT_s\} \cdot \Phi$, wherein IN_s is the size of an input packet input at said ~~respective~~ ingress port, OUT_s is the size of an output packet output at said ~~respective~~ egress port and Φ is a rate factor.

15. (currently amended): The rate regulator of claim 14, wherein said rate factor Φ is equal to 1 if a rate of ~~a~~ said ingress port at a source node is higher than a rate of said egress port,

and wherein said rate factor Φ is equal to 0 if a rate of said ingress port is lower than said rate of said egress port,

16. (Original): The rate regulator of claim 12, wherein said network is an Ethernet based network having Ethernet traffic.

17. (currently amended): The rate regulator of claim 16, wherein said Ethernet based network is selected from ~~the~~ a group consisting of a metro Ethernet network (MEN), a local area network (LAN), or a virtual local area network (VLAN).

18. (Original): The rate regulator of claim 16, wherein said Ethernet traffic is transmitted over non-Ethernet networks.

19. (currently amended): The rate regulator of claim 18, wherein said non-Ethernet network is selected from ~~the~~ a group consisting of a SDH network and a SONET network.

20. (currently amended): The rate regulator of claim 12, wherein said egress port is an Ethernet port selected from ~~the~~ a group consisting of 10 Mbps, 100 Mbps and 1 Gbps.

21. (currently amended): The rate regulator of claim 12, wherein said ingress port is an Ethernet port selected from ~~the~~ a group consisting of 10 Mbps, 100 Mbps and 1 Gbps.